

**Amendments to the Claims**

This listing of claims will replace all prior versions and listings of claims in the above-identified application.

**Listing of Claims:**

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1.     **(Previously Presented)** A method of packet processing comprising:  
  
      parsing a packet using a first peripheral processor, said packet having a header  
          portion, to determine a vector;  
      coordinating processing using said vector;  
      deconstructing said packet header to form header data using a second peripheral  
          processor;  
      searching one or more data structures based on said header data to produce search  
          results using a third peripheral processor;  
      editing said packet based on said search results, said header data, and said vector  
          using a fourth peripheral processor;  
      wherein said coordinating comprises,  
          storing data within a shared register set coupled to each of said  
              peripheral processors,  
          sharing said data with said parsing, said deconstructing, said  
              searching, and said editing, and  
          monitoring said deconstructing, said searching, and said editing.
  - ✓ 2.     **(Canceled)**
  3.     **(Original)** The method of Claim 1, further comprising buffering said  
packet before said parsing.
  4.     **(Original)** The method of Claim 1, wherein:  
      said deconstructing further comprises forming a search argument; and  
      said searching uses said search argument.

5.     **(Original)** The method of Claim 1, wherein:  
said deconstructing further comprises forming a search argument;  
said coordinating further comprises operating on said search argument to form a  
          modified search argument prior to said searching; and  
said searching uses said modified search argument.
6.     **(Currently Amended)** An apparatus for packet processing, comprising:  
one or more peripheral processors to perform one or more packet processing  
          tasks, wherein said one or more peripheral processors comprises,  
                  a packet parser to determine a vector;  
a central processor to coordinate said one or more packet processing tasks using  
          said vector; and  
a shared register set coupled to said ~~one~~ one or more peripheral processors and to  
          said central processor; wherein,  
                  said central processor and said one or more peripheral processors  
                          share data using said shared register set.
7.     **(Original)** The apparatus of Claim 6, wherein said central processor  
comprises a general purpose processor.
8.     **(Original)** The apparatus of Claim 6, wherein said central processor  
comprises a microsequencer.
9.     **(Original)** The apparatus of Claim 6, wherein said central processor  
comprises more than one processor acting in concert.
10.    **(Original)** The apparatus of Claim 6, wherein one or more of said  
peripheral processors comprise fixed logic circuits.
11.    **(Original)** The apparatus of Claim 6, wherein one or more of said  
peripheral processors comprise programmable logic circuits.
12.    **(Original)** The apparatus of Claim 6, wherein one or more of said  
peripheral processors comprise a programmable state machine.

✓13. (Canceled)

14. (Original) The apparatus of Claim 6, wherein said central processor and at least one peripheral processor together form at least a part of a single application specific integrated circuit.

15. (Currently Amended) A computer system for packet processing, comprising computer instructions for:  
parsing a packet using a first peripheral processor, said packet having a header portion, to determine a vector;  
coordinating processing using said vector;  
deconstructing said packet header to form header data using a second peripheral processor;  
searching one or more data structures based on said header data to produce search results using a third peripheral processor;  
editing said packet based on said search results, said header data, and said vector using a fourth peripheral processor;  
wherein said coordinating comprises,  
storing data within a shared register set coupled to each of said peripheral processors,  
sharing said data with said parsing, said deconstructing, said searching, and said editing, and  
monitoring said deconstructing, said searching, and said editing.

✓16. (Canceled)

17. (Original) The computer system of Claim 15, further comprising buffering said packet before said parsing.

18. (Original) The computer system of Claim 15, wherein:  
said deconstructing further comprises forming a search argument; and  
said searching uses said search argument.

19. **(Original)** The computer system of Claim 15, wherein:  
said deconstructing further comprises forming a search argument;  
said coordinating further comprises operating on said search argument to form a  
modified search argument prior to said searching; and  
said searching uses said modified search argument.

20. **(Previously Presented)** A computer-readable storage medium,  
comprising computer instructions for:  
parsing a packet using a first peripheral processor, said packet having a header  
portion, to determine a vector;  
coordinating processing using said vector;  
deconstructing said packet header to form header data using a second peripheral  
processor;  
searching one or more data structures based on said header data to produce search  
results using a third peripheral processor;  
editing said packet based on said search results, said header data, and said vector  
using a fourth peripheral processor;  
wherein said coordinating comprises,  
storing data within a shared register set coupled to each of said peripheral  
processors,  
sharing said data with said parsing, said deconstructing, said searching,  
and said editing, and  
monitoring said deconstructing, said searching, and said editing.

✓ 21. **(Canceled)**

22. **(Original)** The computer-readable storage medium of Claim 20, further  
comprising buffering said packet before said parsing.

23. **(Original)** The computer-readable storage medium of Claim 20, wherein:  
said deconstructing further comprises forming a search argument; and  
said searching uses said search argument.

24. **(Original)** The computer-readable storage medium of Claim 20, wherein:  
said deconstructing further comprises forming a search argument;  
said coordinating further comprises operating on said search argument to form a modified  
search argument prior to said searching; and  
said searching uses said modified search argument.

25. **(Previously Presented)** A computer data signal embodied in a carrier wave, comprising computer instructions for:  
parsing a packet using a first peripheral processor, said packet having a header portion, to determine a vector;  
coordinating processing using said vector;  
deconstructing said packet header to form header data using a second peripheral processor;  
searching one or more data structures based on said header data to produce search results using a third peripheral processor;  
editing said packet based on said search results, said header data, and said vector using a fourth peripheral processor;  
wherein said coordinating comprises,  
storing data within a shared register set coupled to each of said peripheral processors,  
sharing said data with said parsing, said deconstructing, said searching, and said editing, and  
monitoring said deconstructing, said searching, and said editing.

✓ 26. **(Canceled)**

27. **(Original)** The computer data signal of Claim 25, further comprising buffering said packet before said parsing.

28. **(Original)** The computer data signal of Claim 25, wherein:  
said deconstructing further comprises forming a search argument; and  
said searching uses said search argument.

29.     **(Original)** The computer data signal of Claim 25, wherein:  
said deconstructing further comprises forming a search argument;  
said coordinating further comprises operating on said search argument to form a modified  
search argument prior to said searching; and  
said searching uses said modified search argument.

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